M E M O R A N D U M

Department of Environmental Quality
Technical Services Office

SUBJECT: Guidance Memo No. 97-2003

Standard Operating Procedure for the Electronic File Transfer of Data Sets from the National Computing Center STORET Database to a PC

TO: Regional Directors

FROM: John M. Daniel

DATE: September 12, 1997

COPIES: Regional Permit Managers, Regional Compliance and Enforcement Managers, Regional Water Permit Managers, Robert Mann, Robert Beasley, Jack Shubert, and James Sydnor.

The Office of Water Quality Assessment and Planning has developed a Standard Operating Procedure (SOP) for downloading data from the STORET database maintained by the USEPA. This guidance memorandum updates the Water Quality Assessment Operating Procedures Manual by incorporating this SOP as a standard practice of the Agency.

A copy of the SOP and the revised procedures manual title page are attached.

SOPs are working documents and I encourage you to direct your questions, changes, comments, and improvements to R.E. Stewart, WQAP.

WATER QUALITY ASSESSMENT OPERATING PROCEDURES MANUAL

Revised June 28, 1991
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CAUTION

STANDARD OPERATING PROCEDURE for the

Electronic File Transfer of Data Sets from the National Computing Center STORET Database to a PC

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1. Scope

This Standard Operating Procedure is provided to assist Department staff in the retrieval of electronic data from EPA's National Computing Center mainframe application STORET. This procedure is intended for downloads of large files, i.e. greater than 20,000 lines, that require post processing.

This SOP can be used by anyone with a valid STORET account and access to the DEQ LAN menu.

2. Referenced Documents

Documents which may be useful for reference are:

1. Guide for Use of EPA's National Computer Center and Storet System, compiled by: Vera Pollock, Virginia Department of Environmental Quality, August 1994.
2. Standard Operating Procedures, Data Handling, Analysis and Reporting, Volume 4, Water Quality Monitoring Program, Polecat Creek, Chesapeake Bay Local Assistance Department, August 30, 1994, DRAFT.
3. DOWNLOAD, On-Line Documentation System, STORET User Support.

3. Storet Assistance

STORET User Support
Mail Stop 4503-F
U.S. Environmental Protection Agency
401 M St., S.W.
Washington, DC 20460
Voice (800) 424-9067
FAX (202) 260-1977
Email STORET@epamail.epa.gov

STORET Technical Support
Lockheed Martin
800.334.2405

STORET ONLINE Access

Dialing Instructions:
800.445.2795
IBM 3270 emulation
7 bit, 1 stop bit, even parity, half duplex

Logon Instructions:
select IBMPSI
select A TSO - NCC
ACCOUNT NUMBER = S511
PROCEDURE NAME = AASTORET
FIMAS ID = STORP
BIN NUMBER = M### (where ### = user ID)

4. Summary

A memory resident LAN application is loaded prior to STORET logon. Once in STORET, a data set is created using the standard retrieval procedures. The data set is submitted for processing but not printing. The data set is spun from processing to

the users catalog. The data set is transferred to the users PC by a mainframe to PC LAN application called **TSO File Transfer**.

A second procedure using Transmission Control Protocol / Internet Protoccol (TCP/IP) with File Transfer Protocol **(FTP)** is available to those with Internet access via the DEQ LAN.

A third procedure **(STATISTICAL DATA SET MANAGEMENT)** specifies the creation of a customized retreival. The data set created by this procedure is useful for statistical anaylsis as the data can be arranged in the standard format recognized by most PC based software applications. The use of Microsoft Excel or Microsoft Access is highly recommended for the post processing of this type of data.

5. Significance and Use

This SOP is designed for the post processing of large STORET data sets on a PC. This procedure will allow the capture and transfer of any data set regardless of size. Consequently it is important that the users of this SOP are aware of the size of the target data sets.

TSO file transfer proceeds at approximately 600 bytes per second. For a 1.2 Mb file, those between 20,000 and 30,000 lines as listed in the SDSF, this equates to 33 minutes for file transfer.

FTP file transfer proceeds at 50 to 100 Kb per second so for those with access to FTP this is the most efficient way to download.

Files can be transferred as raw binary data or character ASCII text files. When importing the data into MS Excel, which is were the post processing conversion begins, the character file format is required. This SOP will only provide the character file protocol, however the binary option will be obvious to those experienced with TSO file transfer.

When importing data refer to the on-line help and conversion Wizard provided with MS Excel.

6. TSO Procedure

1. Logon to the DEQ LAN.
2. From DEQ network main menu choose the "****BANYAN SERVICES****" function.
3. From the Banyan Services Menu, choose the "Communications Menu" function.
4. From Communications Menu, choose the "Make SNA Gateway Memory". This loads into your PC's memory the software necessary for downloading.
5. Press <Alt-Z> to display DIT's login screen.
6. Enter NETSOEPA.
7. At NCC select option 2, SYSTEM MENU.
8. Select option 4 TSO.
9. Login to the system by keying in your logon id and password.
10. Create your retrieval using the %RET command. Be sure to specify ROUTE PRINT HOLD.
11. Submit your retrieval using the %SCAN command.
12. Note the job number given to the request after it completes.
13. From the READY prompt enter SDSF.
14. Select O to enter the JES2 output queue.
15. Find the job number in the queue. Some larger jobs will take several minutes to ap in the SDSF queue. A wise use of time is to submit multiple jobs as appropriate and then

LOGOFF and return to STORET at a later time.

16. Once the job is listed in the SDSF queue using the tab key move the cursor under the NP column adjacent to the target job.

17. Type **S** and enter. This will spool the job to display. To move to the first line of the retrieval data type **FIND "RET RET"**. You can browse the output by typing UP or DOWN followed by a space and then the number of lines you want to move up or down. You can also move quickly to the end by typing BOTTOM or back to the front by typing TOP. To move right or left type LEFT or RIGHT followed by a space and the number of lines to move left or right.

18. When you are satisfied you have the data set you want, at the SDSF prompt, enter **SPIN SN filename**. The filename should be a unique eight character maximum name because the SPIN command moves this data set into your working catalog and will overwrite any files with the same name in your catalog. Also by limiting the filename to eight characters you can use the same name when transferring to your PC operating system.

19. Exit SDSF by entering END until you are back at the READY prompt.

20. Enter LISTC to view the contents of your catalog and check to see that your file you just spun is there.

21. To transfer the file be at READY prompt and press <Alt-Z> to bring back the Communications menu.

22. From the Communications Menu, choose the "TSO File Transfer" function. This will bring up the CDI/FTS CDI FILE TRANSFER SYSTEM... screen.

23. The box within the screen should read "FILE TRANSFER CONFIGURED FOR: BANYAN PRESS F2 TO RECONFIGURE" (Just to be safe, PRESS F2 TO RECONFIGURE, press enter on (A) Banyan 3270 transfer may have to hit enter twice).

24. HOST TIME OUT VALUE (In Seconds) should be set to 120. This will return you to the CDI/FTS screen.

25. Select FILE TO PC.

26. Select INTERACTIVE.

27. The FILE TO PC screen will launch.

28. Enter the complete Data Set Name **'JNWS511.VERANUM'** in single quotes.

29. Data Set type key: DATA

30. Select CHARACTER(MOST OTHER FILES) by using the down arrow to move the cursor.

31. If you select character, you can change the defaults on record length, etc. If you want the entire width of the greenbar paper then change the width to 132 columns.

32. Next key in the PC/DOS path name and file name: [drive]:\[path]\filename.txt.

33. PROCEED? YES press enter or use the arrow key to NO or QUIT.

34. File transfer will begin showing how many characters have been transferred. Once the transfer is complete you will return automatically to the CDI/FTS Menu.

35. Press <Alt-Z> to go back to NCC. Remember to LOGOFF once you are finished.

36. Press F3 and then F7 to terminate your session.

37. From the Communications Menu, choose "Remove SNA Gateway from Memory" function. This will release memory which can be used by other applications software.

38. Return to your normal operations.

7. FTP Procedure

1. Evoke the TCP/IP connection using your Internet access software. Internet access software is personal and therefore each setup varies so it is beyond the scope of this SOP to discuss the details of TCP/IP. You should be familiar with the Departments TCP/IP options before attempting this procedure.

2. To connect to NCC from the FTP popup window refer to **Figure 1 Logon to FTP Server** on page 7 making sure you enter your password.

3. Notice the WS_FTP screen behind the Session Profile screen. If it does not tile horizontally like the one shown then select CANCEL on the Session Profile screen.

4. From the WS_FTP screen menu select the Option button and change the Program and Session settings to match those in **Figure 2 Program Options** on page 8 and **Figure 3 Session Options** on page 9.

5. Watch the message area at the bottom left of the WS_FTPscreen to keep track of the logon process.

6.If the logon fails then retry. The messages can help in determining if there is a problem connecting.

7. The top half of the screen displays the local drive contents.

8. The bottom half of the screen displays the equivalent to LISTC in STORET.

9. Make sure the ASCII button box for ASCII FTP is checked. Binary is also available for advanced applications.

10. Click the RECEIVE button and enter in the STORET data set name you wish to receive from your catalog.

11. The FTP transfer will launch and transfer your file to the location specified in 2.7 above.

12. Remember that when creating data sets in STORET unless you are using Windows 95 or NT you must honor the DOS naming conventions (8 chars.3 chars) for the transfer to work properly.

13. When you are finished CLOSE the connection and EXIT the application.

14. When parsing the ASCII file into a spreadsheet or database application it is helpful to have the file extension end in .txt. The download file can easily be renamed with the .txt entesion.

15. Return to your normal operations.

8. STATISTICAL DATA SET MANAGEMENT

1. Logon to NCC.
2. Create a retrieval using the %RET command. Be sure to specify ROUTE PRINT HOLD. The following retrieval is an example, without the JCL, of a retrieval which creats a file with the format specified in lines 70 through 160 of the code. **Table 1 STORET Retrieval Example** on page 10 is an example of the type of ASCII flat file created by this routine. For more information on customized file options consult the STORET help data file DOWNLOAD.

```
0010  PGM=RET, A=21VASWCB,S=1ACAX004.57
0020  BD=760101,ED=790806,
0030  P=00010,P=00299,P=00300,
0031  P=00301,COMPUTED,P=00310,P=00400,
0040  P=00500,P=00530,P=00615,P=00620,
0050  P=00625,P=00630,P=00665,P=31616,
0060  P=00060,P=01351,
0070  FILE01,BYPASS,PABBREV,BLNKRMK=' ',
0080  DSN=###S511.filename,REUSE,
0090  ITEM=STATION,CHEAD=STATION ID,ITEM='
0100  ITEM=' ',
0110  ITEM=DATE,CHEAD=DATE,ITEM=' ',
0120  ITEM=' ',
0130  ITEM=TIME,CHEAD=TIME,ITEM=' ',
```

```
01      ITEM=' ',
0150    DELUSUAL='  ',ITEM=DATAR,WIDTH=9,
0160    ENDFILE,
```

3. The **###** in the above retrieval corresponds to your three letter STORET user ID and **filename** is an eight letter DOS format alphanumeric for the name of the data file which will be created in your catalog when the retrieval is run.
4. Submit your retrieval using the %SCAN command.
5. Note the job number given to the request after it completes so that you can check the status.
6. The retrieval will have created a file in your catalog named **filename**.
7. Enter LISTC to view the contents of your catalog and check to see that the file is sent.
8. To download the data file refer to **Sections 6.0** or **7.0** of this SOP.
9. When transfering these files over the Internet using the Agency's email system the files must first be compressed using PKWARE software. Refer to the manual or online documentation from PKWARE for compressing files using PKZIP.

9. STORET Station Descriptions

1. When sending these data to people unfamiliar with the Agency's station descriptions and station identifiers it is helpful to send an additional data file composed of the stations long description and locational information.
2. The following retrieval is an example, without the JCL, of a retrieval which creats a station information file with the format specified in lines 70 through 160 of the code. **Table 2 STORET Station Description** on page 11 is an example of the type of ASCII flat file created by this routine.

```
0010   PGM=INDEX,A=21VASWCB,
0020   ONLYATTR=STREAM AND AMBNT,
0020   PRT=PAR,S=1ACAX004.57,
```

3. Remember to ROUTE PRINT HOLD. Submit your retrieval using the %SCAN command.
4. Note the job number given to the request after it completes so that you can check the status.
5. From the READY prompt enter SDSF.
6. Select O to enter the JES2 output queue.
7. Find the job number in the queue. Some larger jobs will take several minutes to appear in the SDSF queue.
8. Once the job is listed in the SDSF queue using the tab key move the cursor under the NP column adjacent to the target job.
9. Type S and enter. This will spool the job to display. To move to the first line of the retrieval data type **FIND "RET RET"**. You can browse the output by typing UP or DOWN followed by a space and then the number of lines you want to move up or down. You can also move quickly to the end by typing BOTTOM or back to the front by typing TOP. To move right or left type LEFT or RIGHT followed by a space and the number of lines to move left or right.
10. When you are satisfied you have the data set you want, at the SDSF prompt, enter **SPIN ODSN filename**. The filename should be a unique eight character maximum name because the SPIN command moves this data set into your working catalog and will overwrite any files with the same name in your catalog. Also by limiting the filename to eight characters you can use the same name when transferring to your PC operating system.

11. Exit SDSF by entering END until you are back at the READY prompt.
12. Enter LISTC to view the contents of your catalog and check to see that your file you just spun is there.
13. To download the data file refer to **Sections 6.0** or **7.0** of this SOP.
14. When transfering these files over the Internet using the Agency's email system the files must first be compressed using PKWARE software. Refer to the manual or online documentation from PKWARE for compressing files using PKZIP.

Figure 1 Logon to FTP Server

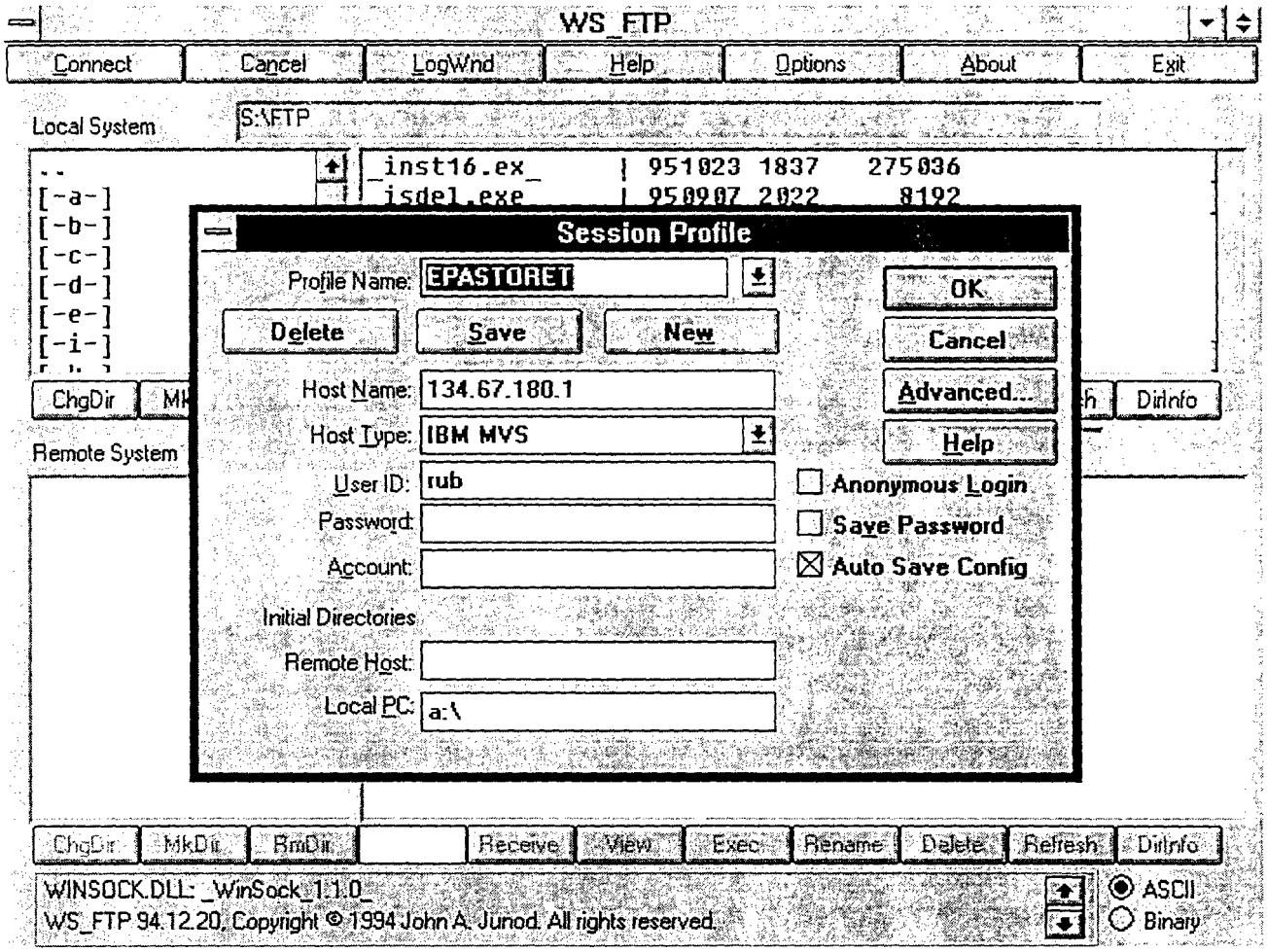

Figure 2 Program Options

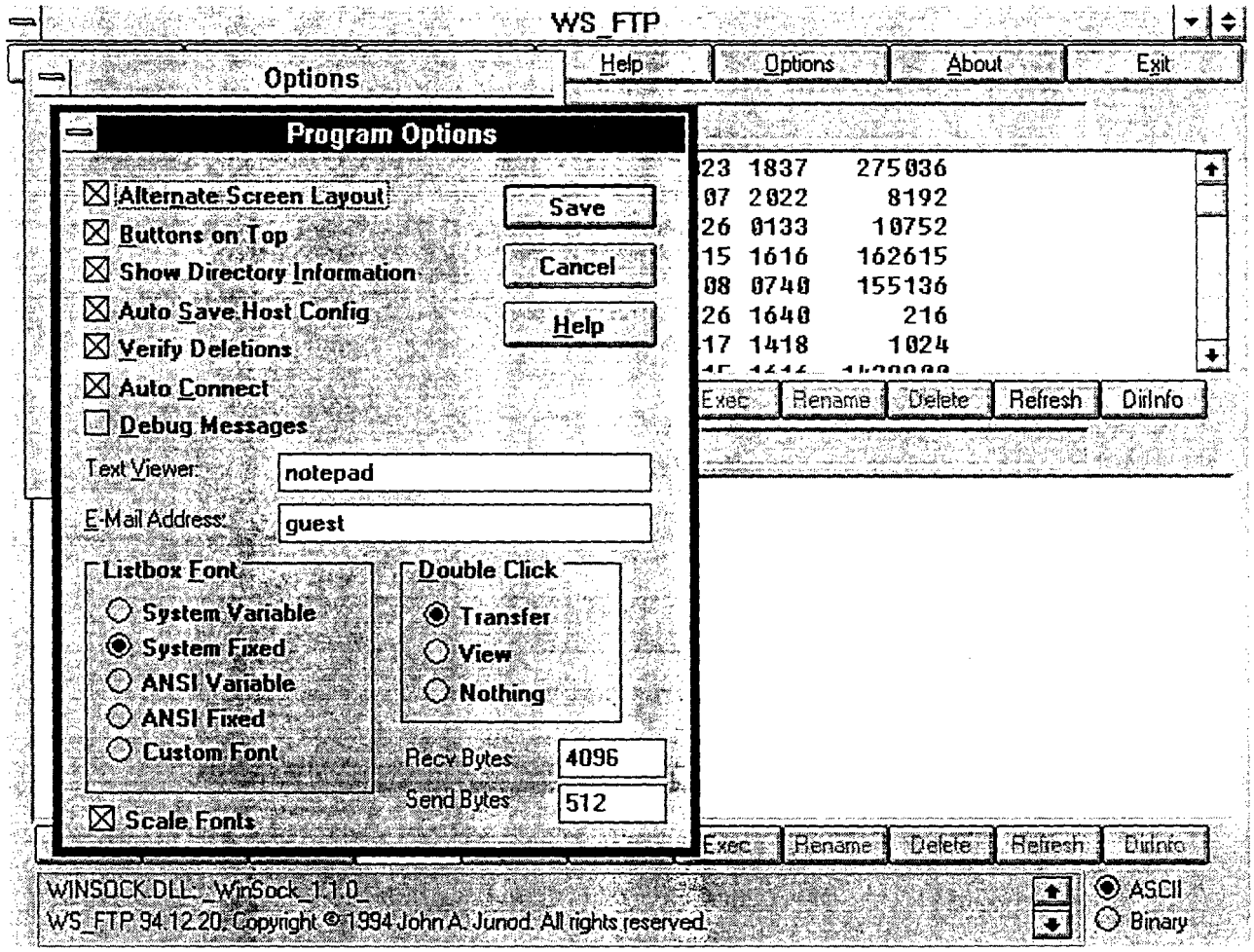

Figure 3 Session Options

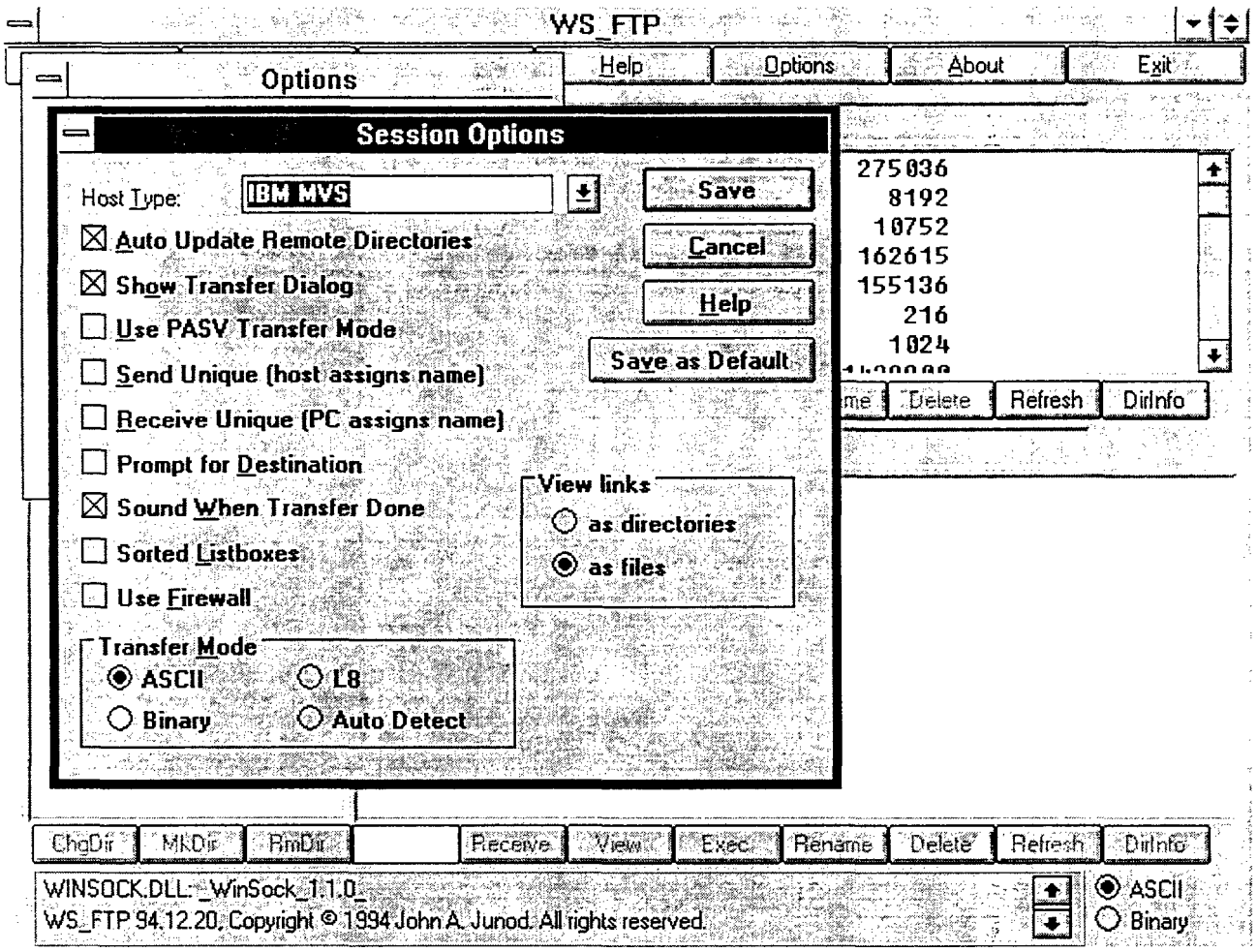

Table 1 STORET Retrieval Example

STATION ID	DATE	TIME	300	310		400	500		530		615		620		625		630		665		31616		60	1351
			DO	BOD		PH	RESIDUE		RESIDUE		NO2-N		NO3-N		TOT KJEL		NO2&NO3		PHOS-TOT		FEC COLI		STREAM	STREAM
				5 DAY			TOTAL		TOT NFLT		TOTAL		TOTAL		N		N-TOTAL				MFM-FCBR		FLOW	FLOW
			MG/L	MG/L		SU	MG/L		MG/L		MG/L		MG/L		MG/L		MG/L		MG/L P		/100ML		CFS	SEVERITY
1ACAX004.57	2/16/78	1145	14.6	2		7.3			1	K	0.01	K			0.1		2.3				100	K		
1ACAX004.57	4/3/78	1315	11.3	1		7.5	84		9		0.01				0.1		1.8				100	K		
1ACAX004.57	4/3/78	1320	11.3			7.5																		
1ACAX004.57	5/12/78	1405	9.6	2		8	115		14		0.01				0.1		1.3				2300			
1ACAX004.57	5/12/78	1410	9.6			8																		
1ACAX004.57	5/31/78	1440	8.5	1		7.8	111		9		0.02				1		1.7				200			
1ACAX004.57	7/6/78	1450	8.3	1		7.9	140		18		0.02				0.2		2.4				400			
1ACAX004.57	8/8/78	525	7.5	1		7.7	141		46		0.01	K			0.4		1.1				8000	L		
1ACAX004.57	9/20/78	1130	7.7	2		7.8	330		6		0.01				0.2		0.28				100			
1ACAX004.57	10/11/78	1240	10.8	2		7.7	80		1		0.01	K			0.2		0.13				100	K		
1ACAX004.57	11/28/78	1135	12	3		7.3	115		1	K	0.01	K			0.3		0.34				100			
1ACAX004.57	12/19/78	1255	13.1	2		7.1	156		1	K	0.01	K			0.2		1.5				100	K		
1ACAX004.57	1/22/79	1225	13.9	4		7.3	214		126		0.01	K			0.4		1.5				2100			
1ACAX004.57	3/21/79	1150	11.2	2		7.5	92		4		0.01	K			0.2		1.6				100	K		
1ACAX004.57	4/26/79	1130	10.6	2		7.6	83		1	K	0.01				0.2		0.8				300			
1ACAX004.57	5/23/79	1210	8.8	1		7.7	11		11		0.03				0.3		1.1				300			
1ACAX004.57	6/21/79	1500	9.4	1		7.8	118		18		0.01	K			0.2		1.5				1100			
1ACAX004.57	7/9/79	1230	9.5	1	K	7.8	138		300		0.01		1		0.4				0.1	K	400			
1ACAX004.57	8/6/79	1410	8.4	2		7.9	127		9		0.01		0.8		0.3				0.1		500			3

Table 2 STORET Station Description

21VASWCB 51107 LOUDOUN VIRGINIA ROUTE 663
1ACAX004.57 VA1A10-X0141 VA1A3X0141 1-POTOMAC-SHENANDOAH
39 15 18.0 077 34 36.0 1 STORED 780915 02-NORTH-ATLANTIC DEPTH 0
/TYPA/AMBNT/STREAM
INDEX 0214001 003810 00010 02070008018
MILES 165.61 .90 4.57 0002.480 HQ
VIRGINIA STATE WATER CONTROL BOARD AMBIENT MONITORING 05
BASIN: 1A POTOMAC REGION: 3 NORTHERN VIRGINIA 15
RIVER: CATOCTIN CREEK SECTION: 10 25
TOPO MAP #: 0006 TOPO MAP NAME: POINT OF ROCKS, VA - MD 35